Neo4J Fundamentals

Project Deliverable

- A Github Repository URL containing a markdown document.

Description

You have been given the task of answering the following questions using a graph consisting of an institution's data. The nodes and relationships are specified in Cypher as shown:

Nodes

```
CREATE (s1: Student {studentID: "1", lastName: "Doe", firstName: "Ana", middleName: "Maria"})
CREATE (s2: Student {studentID: "2", lastName: "Ung", firstName: "Peter", middleName: "John"})
CREATE (s3: Student {studentID: "3", lastName: "Doe", firstName: "John"})
CREATE (s4: Student {studentID: "4", lastName: "Berre", firstName: "Stine"})
CREATE (s5: Student {studentID: "5", lastName: "Travolta", firstName: "John"})
CREATE (c1: Course {courseNr: "1", courseName: "Databases"})
CREATE (c2: Course {courseNr: "2", courseName: "Programming"})
CREATE (c3: Course {courseNr: "3", courseName: "Graphics"})
CREATE (p1: Project {projectNr: "34", projectName: "eCommerce database"})
CREATE (p2: Project {projectNr: "24", projectName: "eCommerce website"})
CREATE (p3: Project {projectNr: "13", projectName: "User interface"})
CREATE (p4: Project {projectNr: "26", projectName: "Reporting"})
CREATE (r1: Room {roomName: "Pascal"})
CREATE (r2: Room {roomName: "Seminar C"})
CREATE (r3: Room {roomName: "Alpha"})
CREATE (r4: Room {roomName: "Beta"})
```

Relationships

```
CREATE (c1) - [:TAKESPLACEIN] -> (r1)
CREATE (c1) - [:TAKESPLACEIN] -> (r3)
CREATE (c1) - [:TAKESPLACEIN] -> (r4)
CREATE (c2) - [:TAKESPLACEIN] -> (r2)
CREATE (s1) - [:ENROLLEDIN] -> (c1)
CREATE (s2) - [:ENROLLEDIN] -> (c1)
CREATE (s3) - [:ENROLLEDIN] -> (c2)
CREATE (s4) - [:ENROLLEDIN] -> (c1)
CREATE (s1) - [:WORKSON {hours: "1"} ] -> (p1)
CREATE (s1) - [:WORKSON {hours: "2"} ] -> (p2)
CREATE (s2) - [:WORKSON {hours: "3"} ] -> (p1)
CREATE (s2) - [:WORKSON {hours: "4"} ] -> (p2)
CREATE (s2) - [:WORKSON {hours: "1"} ] -> (p3)
CREATE (s2) - [:WORKSON {hours: "1"} ] -> (p4)
CREATE (s3) - [:WORKSON {hours: "1"} ] -> (p1)
CREATE (s3) - [:WORKSON {hours: "2"} ] -> (p2)
CREATE (s3) - [:WORKSON {hours: "3"} ] -> (p4)
```

Specify the following queries in Cypher and execute them in Neo4j.

1. In which rooms do courses with course number "1" take place? Retrieve the course name and the names of the rooms in which the course takes place.

2. How many hours and in which projects do students with student number "1" works? Retrieve the first name of the student, the project the student works on, and the corresponding number of hours worked on the project.

3. Which students and how many hours do they work on the project with project number "24"? Retrieve the project name, the last name of the student and the corresponding number of hours worked on the project.

4. Which students work on which projects and how many hours? Retrieve the last name of the students, the name of the projects they work on, and the corresponding number of hours. Order the results by the last name of the students. Limit the results to four.

5. Which students work on more than two projects and on how many projects exactly? Retrieve the last name of the students and the corresponding number of projects. Order the results by the number of projects.

6. Which students have the same last name and work on the same projects? Retrieve the first name of the students and the name of the projects they share.